



## Outline

- Intro and review of the problem.
- Some potential solutions.
  - Jump ship. What real alternatives are there.
  - Similar ship, different names: Fedora Core and Legacy projects.
  - Same ship, different compiler: Fermi Linux LTS, cAos.
  - Can't beat 'em, join 'em. Buying in to RHEL.



## Some abbreviations and definitions

**RHL - Red Hat Linux.** The "consumer" or "free" versions. (7.x, 8.x, 9)

**RHEL - Red Hat Enterprise Linux.** Versions based on RHL (past) or FC (now), per system, per year charge. Comes in WS, ES and AS flavors.

**RHPW - Red Hat Professional Workstation** Sort of RHEL WS-lite + desktop. ~\$80, 1 yr RHN, only available in a box. After 1 yr???

**RHN - Red Hat Network.** Allows a single system use "up2date" to download patched packages (equivalent to APT or YUM).

**RHEN - Red Hat Enterprise Network.** RHN + a web front end allowing groups and multi-system package management (used by Physics).

**FC - Fedora Core.** A non-commercial project sponsored but not 100% controlled by Red Hat.

**FL - Fedora Legacy.** A project working to provide support for RHL 7.3, 9 and obsolete FC.



### What is the problem

Red Hat is moving away from selling boxed sets and supporting consumer level customers in order to focus on "enterprise" level customers. As a consequence:

- No security patches for RH  $\leq$  8.0 after 2003/12/31
- No security patches for RH 9 after 2004/04/30
- RH 9 is the **last** "consumer", re-distributable RHL.
- Red Hat will only support RHEL; only RHEL in RHN/RHEN.
- RHEL prices: cheapest (w/out volume discounts): WS = \$179 per system per year for 1-2 CPU.
- WS includes only a few servers: HTTP, SMB, and NFS (but, apparently no DBs?). Need the more expensive AS or ES for most servers.
- RHL  $\rightarrow$  RHEL needs full re-install (some reports of upgrades working)
- Buying into RHEL allows Red Hat to audit your "organization".



## Jumping Ship - Alternatives to Red Hat

Non-barriers to jumping:

- Ignoring RHEN, package management sees a level playing field. I.e. `up2date`  $\equiv$  `APT`  $\equiv$  `YUM`, to first order.
- Both in jumping ship and going from RHL  $\rightarrow$  RHEL one will need a full re-install.
- Potential to gain more control, pay less money.

Barriers:

- Change == bad.
- Likely loose RHEN.

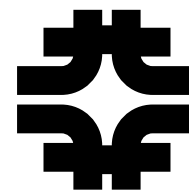
Which distribution to choose???



debian



Fedora Core



Fermi Linux



## Debian!

### Pros:

- Non-commercial - no profit motive, supported by thousands of developers. Decisions based on a constitutionally bound democracy, implemented in formalized policy documents. Stability, not surprises!
- Decade long track record of proven commitment to quality and security. Often first distribution to find/release a security fix.
- Choice of two distributions: the long supported (3+ years) "stable" release only updated with security fixes, or the cutting-edge "testing/unstable" releases with the very latest software.
- Trivial upgrades (no reinstall needed) between stable releases, stable → testing/unstable or can just ride testing/unstable forever.
- The highest quality packaging and best package management system containing the most packages (~10K).
- Much existing Debian experience at BNL, both inside and outside of ITD.
- Voted best distribution in this year's Linux Journal survey.



## Debian!

### Cons:

- No official support for some important proprietary software (eg. Oracle). This is more important for servers than clients.
- Stable releases mostly gets just security updates. New hardware sometimes requires running testing/unstable distribution.
- No service level guarantees, (but they do have a "Social Contract" with the Free Software community).
- Some consider Debian difficult to install, (is slowly improving).
- Some dislike Debian's lack of GUI based admin tools (although, this is a pro for many!)
- There is a need to be more familiar with Debian system internals than with RHL or other "consumer" distributions.



## Novell/SUSE and Mandrake

This is mostly hearsay and guesses.

### SUSE:

- Individual SUSE users praise it.
- It enjoys support from 3rd party proprietary software (more than Debian, similar to RH).
- It now has a large corporation (Novell) backing/buying it (and Ximian).
- Reports of large companies already considering RH->SuSE switch.
- Pricing appears to be **higher** than RHEL.

### Mandrake:

- Individual Mandrake users praise it (vehemently).
- Reportedly more desktop than server oriented.



# Fedora Core - the Debian of Red Hat, sort of.

- Unknown quantity.
- Red Hat retains "editorial control" but with external developers participating in decisions.
- No formal support from RH, informal support from volunteer mailing lists, bug submission, etc.
- Free and "Red Hat-like" (no big re-education needed).
- Short release cycle, ~6 months, updates 2-3 months after next release (Fedora Legacy may take this further).
- Security fixes not back ported, must upgrade package to most recent version.
- Updates via APT/RPM or YUM or via up2date which now "speaks" APT and YUM. No FC in RHEN.
- RHEL harvests packages from FC.





## Free versions of RHEL

Okay to redistribute compiled-from-source RHEL.

Fermi Linux.

- Will support 7.3 at least until 2004/12/31.
- Will develop Fermi Linux LongTermSupport (LTS) based on RHEL 3.0. Beta release 2003/12/01. Jan/Feb 04 release.
- FNAL claims FL LTS will be "basically identical" to Red Hat's RHEL, implying no FNAL-specific mods.
- Seems best bet

cAos ([www.caosity.org](http://www.caosity.org))

- Free community supported compilation of RHEL.
- No release yet - no ETA.

Others?



## Free-RHEL concerns

- Will FL LTS be suitable for BNL "out of the box"?
- Time frame for FL LTS is tight. RH  $\leq$  8.0 dead just after LTS beta release. Only a couple months between expected release date and RH 9's EoL.
- cAos is still in the (self-admitted) vapor-ware stage.
- SLAC-RHEL? CERN-RHEL? BNL-RHEL??? or maybe come together for a HEP-RHEL?
- If we want to keep using RHEN how do we do it (and how much do we pay)? Will buying a RHEN Satellite Server solve the problem?



## RHEL - Buying In

Common to all flavors:

- All include RHN entitlements. RHEN is extra.
- Entitlements are per system per year.
- 5 year security updates, 3 year bug updates, 12-18 month release cycle.
- Users of RHEL open up their "organization" to auditing by Red Hat.

Three flavors: WS, ES, AS, fine splitting based on support.

- WS: \$179-299 (\$792 for 64 bit). #cpu  $\leq$  2, few servers (HTTP, SMB, NFS but no NIS, DHCP. DBs?).
- ES: \$349-799.
- AS: \$1499-2499 (+\$500 for 64 bit).

Large discounts for bulk purchases (see next talk).



## RHEL - Open questions

How does Red Hat Enterprise Network still fit in? Is it still worth using?

With a RHEN Satellite Server (SS) we can inject our own packages. What about RHEN SS plus:

- Built-from-source RHEL, maybe with Fermi Linux packages?
- Feeding Fedora packages?

And the big question: what is the cost? If we buy SS but feed it only free packages (Fermi Linux / Fedora) to free clients do we still pay client connection entitlements?

What kind of deal can be negotiated for bulk purchases?

What are the other labs doing?



## Some decisions in Physics

NUHEP workstations and servers (dozen systems):

- Physics SSH gateway, mirror, web, mail, interactive jobs and batch analysis.
- Gradually migrate all systems to Debian ("stable" and "testing" depending on need).

HE/Nu/Riken Theory workstations (~40 systems):

- Will buy RHEL entitlements if bulk discounts work out.
- O.w. will consider CERN/Fermi Linux if it is available in time.
- Fall back is to switch to Debian ("testing" for latest GCC and XFree86).

RHIC Computing Facility (RCF) (1k node cluster):

- Behind an internal firewall, immediate security patching unnecessary.
- Stay at RH 8.0 for now (would anyways) take a wait and see approach for the future.



# Responding to New Directions of Red Hat

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